

The invention in which an exclusive right is claimed is defined by the following:

1. A method for initiating a action in regard to a document being accessed by a user in an application, comprising the steps of:

- (a) parsing a text entry made by a user in the document to identify at least one linguistic component of the text entry;
- (b) providing a plurality of tags, each of the plurality of tags having a action associated with it;
- (c) comparing said at least one linguistic component to the plurality of tags to determine at least one tag that corresponds to each linguistic component; and
- (d) carrying out the action associated with said at least one tag.

2. The method of Claim 1, wherein said at least one linguistic component corresponds to a subset of the plurality of tags, said subset including at least two tags, further comprising the step of displaying each tag in the subset to the user to enable the user to select the tag corresponding to the linguistic component, so that the action associated with the tag selected by the user is carried out.

3. The method of Claim 1, further comprising the steps of:

- (a) determining a user dependent context as a function of an identity of a current user of the application; and
- (b) enabling only specific tags to be accessible by the current user as a function of the user dependent context.

4. The method of Claim 1, further comprising the steps of:

- (a) determining a use dependent context as a function of a current use of the document; and
- (b) enabling only specific tags to be accessible by the current user as a function of the use dependent context.

5. The method of Claim 1, wherein the step of providing the plurality of tags comprises the steps of:

- (a) specifying each of the plurality of tags as linguistic annotations and synonyms thereof;
- (b) defining the actions associated with each of the plurality of linguistic annotations; and
- (c) creating a tag catalog that includes the linguistic annotations, synonyms, and actions for the plurality of tags in a semantic modeling format.

6. The method of Claim 1, wherein the document comprises a predefined schema in which specific regions of the document are associated with a predefined group of tags.

7. The method of Claim 6, wherein a action associated with a tag provides input to another region of the predefined schema.

8. The method of Claim 1, wherein the step of parsing a text entry comprises the steps of:

- (a) applying a natural language recognizer to the text entry to produce a normalized tree of the text entry;
- (b) providing a dictionary that includes a plurality of instances that are returned in response to a match with the normalized tree, a plurality of single words associated with each of the plurality of instances, and a plurality of multiword phrases associated with each of the plurality of instances; and
- (c) comparing the normalized tree of the text entry to the dictionary to determine at least one instance that will be returned as said at least one tag.

9. The method of Claim 8, wherein the dictionary also includes a description of each of the plurality of instances, further comprising the step of enabling the user to select a tag corresponding to an instance that should be used to carry out the action, from a plurality of possible tags that are presented to the user if a single tag is not determined by the step of comparing the normalized tree of the text entry to the dictionary.

10. The method of Claim 1, wherein the plurality of tags accessible by a user are dependent upon a role of the user in processing the document, further comprising the step of making different sets of tags accessible in the document when the document is opened in the application by users having different roles, each set of tags corresponding to a different role of the user in accessing the document.

11. The method of Claim 1, wherein the document is opened in the application on a client computing device and steps (b) and (c) are carried out on a server computing device.

12. The method of Claim 1, wherein the tags and actions associated therewith are maintained in a catalog on a server that is accessed by each of a plurality of users over a network

13. The method of Claim 1, further comprising the step of determining whether a location in the document in which the user has just entered text is associated with any of the plurality of tags.

14. A memory medium having machine readable instructions for carrying out steps (a), (c), and (d) of Claim 1.

15. A memory medium having machine readable instructions for enabling a user to carry out step (b) of Claim 1.

16. A method for automating actions in a document, based upon text entered in the document by a user, comprising the steps of:

- (a) parsing the text entered in the document by the user to recognize any key words and key phrases included therein;
- (b) identifying synonyms of key words recognized in the text entered by the user;
- (c) comparing the key words, synonyms, and key phrases to words, and phrases included in a predefined dictionary;

(d) returning an instance for any corresponding match between any of a key word or synonym and a word in the dictionary, or between a key phrase and a phrase in the dictionary; and

(e) for an instance that is returned, causing an action associated with said instance to be implemented in the document.

17. The method of Claim 16, further comprising the step of displaying multiple instances to the user for any case in which the text entered by the user in the document causes multiple possible instances to be returned, to enable the user to select one of the multiple instances so that an action associated with said one of the multiple instances is implemented in the document.

18. The method of Claim 16, wherein the action associated with the instance that is returned causes an entry to be made in the document that is related to the text entry by the user.

19. The method of Claim 16, wherein the dictionary and the actions associated with the instances are contextually predefined, so that different instances and associated actions are included for each different class of user accessing the document.

20. The method of Claim 16, wherein the dictionary and the actions associated with the instances are contextually predefined, so that different instances and associated actions are included for each different type of document among a plurality of different types of documents.

21. The method of Claim 16, wherein the document is derived from a schema with which the dictionary is associated.

22. The method of Claim 16, wherein the step of parsing the text comprises the step of applying natural language grammar rules to the text entered by the user to identify the key words and key phrases.

23. The method of Claim 16, wherein the instance is associated with a description, further comprising the step of displaying the description to the user to enable the user to confirm the instance, prior to implementing the action associated with the instance.

24. The method of Claim 16, further comprising the step of enabling the user to add additional words and phrases associated with specific instances to the dictionary to create a user lexicon.

25. The method of Claim 16, wherein the step of parsing is carried out by producing one or more parse trees for the text entered by the user, for comparison against corresponding parse trees included in the dictionary.

26. The method of Claim 16, wherein the instances and actions are maintained in a catalog on a server that is accessed by each of a plurality of users over a network.

27. A medium having machine readable instructions for carrying out steps of Claim 16.

28. A system for automating actions in a document, based upon text entered in the document by a user, comprising:

- (a) a user input device enabling text input by a user;
- (b) a display on which the document is displayed;
- (c) a memory in which a plurality of machine instructions are stored;

and

(d) a processing device coupled to the user input device, the memory, and the display, said processing device executing the machine instructions, causing the processing device to carry out a plurality of functions, including:

(i) parsing the text entered in the document by the user to recognize any key words and key phrases included therein;

(ii) identifying synonyms of key words recognized in the text entered by a user;

(iii) comparing the key words, synonyms, and key phrases to words, and phrases included in a predefined dictionary;

(iv) returning an instance for any corresponding match between any of a key word or synonym and a word in the dictionary, or between a key phrase and a phrase in the dictionary; and

(v) for at least one instance that is returned, causing an associated action to be implemented in the document.

29. The system of Claim 28, wherein the machine instructions further cause the processing device to display multiple instances on the display for any case in which the text entered by a user in the document causes multiple possible instances to be returned, to enable a user to select one of the multiple instances and implement a action associated with said one of the multiple instances in the document.

30. The system of Claim 28, wherein the action associated with the instance causes the processing device to make an entry in the document that is related to the text entered in the document by a user.

31. The system of Claim 28, wherein the dictionary and the actions associated with the instances are contextually predefined, so that different instances and associated actions are included for each different class of user accessing the document.

32. The system of Claim 28, wherein the dictionary and the actions associated with the instances are contextually predefined, so that different instances and associated actions are included for each different type of document among a plurality of different types of documents.

33. The system of Claim 28, wherein the document is derived from a schema with which the dictionary is associated.

34. The system of Claim 28, wherein processing device parses the text by applying natural language grammar rules to the text entered by the user to identify the key words and key phrases.

35. The system of Claim 28, wherein the instance is associated with a description, and wherein the machine instructions further cause the processing device to display the description to the user to enable the user to confirm the instance, prior to implementing the action associated with the instance.

36. The system of Claim 28, wherein the machine instructions further cause the processing device to enable a user to add additional word and phrases associated with specific instances to the dictionary to create a user lexicon.

37. The system of Claim 28, wherein the processing device parses the text by producing one or more parse trees for the text entered by a user, for comparison against corresponding parse trees included in the dictionary.

38. The system of Claim 28, wherein the instances and actions are communicated from a remote site to the processing device over a network in a markup language format.

39. A method for specifying actions that will be carried out in a document in response to a text entry by a user in the document by returning a tag corresponding to the text, comprising the steps of:

(a) creating a dictionary that includes linguistic constructs and other metadata relating to natural text that can be entered by a user to activate tags from within the document;

(b) in respect to a template from which the document is produced, associating an action with each tag that can thus be activated;

(c) storing the tags and actions associated with the tags for the template in a catalog that is maintained at a site centrally accessible over a network by each of a plurality of users;

(d) enabling any of the plurality of users to produce the document based upon the template, using a productivity software application; and

(e) providing the dictionary, and the tags and the actions associated with the tags in respect to the template to a user who is working on the document in the productivity software application, to enable the text entered by the user to be recognized as corresponding to one of the tags, so that the action associated with said one of the tags is carried out in the document.

40. The method of Claim 39, further comprising the step of employing the linguistic constructs and other metadata in the dictionary to recognize text entered by the user as corresponding to at least one tag.

41. The method of Claim 40, wherein a plurality of prospective tags are recognized as possibly corresponding to the text entered by the user, further comprising the step of enabling the user to select a tag from among the plurality of prospective tags, so that the action associated with the tag thus selected is carried out in the document.

42. The method of Claim 39, wherein the tags and actions associated with the tags are context sensitive, responding to at least one of:

- (a) a specific user who is currently working on the document;
- (b) a role of the user who is currently working on the document; and
- (c) a type of document.

43. A medium having machine readable instructions for carrying out the steps of Claim 39.

44. A system on which are specified actions that will be carried out in a document in response to a text entry by a user in the document by returning a tag corresponding to the text, comprising:

- (a) a memory in which machine instructions and data are stored, said data including a plurality of tags and actions associated with the tags in regard to a template on which the document is based;

- (b) a network interface that communicates with a plurality of remote computing devices over a network;

- (c) a processing device that is coupled in communication with the memory and the network interface, said processing device executing the machine instructions stored in the memory to carry out a plurality of functions, including:

- (i) enabling the tags and actions associated with the tags to be centrally maintained; and

- (ii) enabling any of a plurality of remote computing devices to access and download the tags and actions associated with the tags over a network for use in carrying out the action associated with any tag that corresponds to text entered in the document.



45. The system of Claim 44, wherein the memory stores a dictionary of words and linguistic constructs relating to text that can be entered in the document and which correspond to the tags, said machine instructions further causing the processing device to transfer the dictionary to any of the plurality of remote computing devices that is accessing and downloading the tags and actions associated with the tags, said dictionary be usable to recognize the tag associated with the text.